TABLES OF THE ELEMENTS OF COMET ORBITS.

COMPILED BY W. C. WINLOCK.

The following tables of the elements of cometary orbits have
been prepared at the suggestion of Professor HOLDEN, to facilitate
comparison of the orbits of newly discovered comets with those
already known.

The data for Table I had been taken from a number of sources,
but largely from Dr. VALENTINER's interesting little book
"Kometen und Meteore," * before the lately published and
most complete and admirable work of Dr. GALLE † came into
my hands, when the latter served at once as a check upon the
older lists.

Table I.— Approximate elements of all computed orbits of
comets from B. C. 372 to A. D. 1896.—The approximate elements
are here given of the orbits of all comets that have been sufficiently
determined to the end of the year 1895; arranged according to
the date of perihelion passage.

The current numbers in the first column are those adopted by
Dr. GALLE in his latest list (to avoid the unnecessary introduc-
tion of new notation), and serve for convenient reference from the
succeeding tables. A consecutive series of numbers is used
throughout, so that the periodic comets receive a new number at
each observed return. Each of the well-known periodic comets

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* "Die Kometen und Meteore," von W. VALENTINER. 240 pages, 12mo, Leipzig, 1884.

† "Verzeichniss der Elemente der bisher berechneten Cometenbahnen nebst Anmerk-
ungen und Literatur-Nachweisen zum Jahre 1894," von J. G. GALLE. 20 + 315 pages, 4to,
Leipzig, 1894.

is designated as well by a special name, usually that of the discoverer, abbreviated as follows (see Col. 1, Table I):

d'A $=$ d'ARREST'S comet.
B $=$ BIELA'S (the two components, B^A and B^B).
Br $=$ BRORSEN'S comet.
E $=$ ENCKE'S comet.
F $=$ FAYE'S comet.
Fi $=$ FINLAY'S comet.
H $=$ HALLEY'S comet.
O $=$ OLBERS' comet.
P-Bs $=$ PONS-BROOKS comet.
$T_1 =$ TEMPEL$_1$ comet.
$T_2 =$ TEMPEL$_2$ comet.
T_3-S $=$ TEMPEL$_3$-SWIFT comet.
Tu $=$ TUTTLE'S comet.
W $=$ WINNECKE'S comet.
Wo $=$ WOLF'S comet.

The orbit elements are given in succeeding columns as follows:

$T =$ time of perihelion passage.
$\omega =$ "argument of perihelion" $= \pi - \Omega$, where $\pi =$ longitude of perihelion.
$\Omega =$ longitude of the ascending node.
$i =$ inclination of the comet's orbit to the ecliptic (counted from $0°$ to $180°$).
$q =$ distance of the comet from the Sun at perihelion, the mean distance of the Earth from the Sun being taken as 1.
$a =$ semi-major axis of the orbit, the mean distance of the Earth from the Sun being 1.
$U =$ period of revolution about the Sun, in years.
$e =$ eccentricity of orbit.

Where more than one comet is recorded in a year, the Roman numerals I, II, III, etc., indicate the order in which they passed perihelion. The month, day, and tenth of a day of perihelion passage (T) are also given, the time being strictly that of the Paris meridian, as in most lists of comets, but the correction to reduce this to the Greenwich meridian is entirely inappreciable here, amounting to but -0.006 of a day.

The abbreviations for the months are:

Ja = January.	Jl = July.
F = February.	Ag = August.
Mr = March	S = September.
Ap = April.	O = October.
My = May	N = November.
Je = June.	D = December.

The angle ω, which has been called the "argument of perihelion," has been used in the elements, as it has a simpler geometrical signification than the longitude of perihelion π, and is now much more commonly used by computers.

The inclination *i*, as proposed by GAUSS, is counted from 0° to 180°, avoiding the necessity of designating an orbit as "Direct" or "Retrograde."

The last column of Table I gives the discoverer's name.

Table II.— Comets arranged in order of ω.—The comets catalogued in Table I are here arranged according to the "argument of perihelion," ω. The first column gives the limiting values of ω, and the second the reference numbers to Table I, or for well-known periodic comets the adopted abbreviation. The comet numbers within the given limits for ω are also arranged, approximately, but not strictly, according to the increasing values of ω.

Table III.— Comets arranged in the order of the longitude of the ascending node, ☊.—The first column gives limiting values of ☊, the second column reference numbers to the complete elements in Table I.

Table IV.— Comets arranged in order of inclination, *i*.— In the first column the values of *i* are given for each degree from 0° to 180°, the second column reference numbers to Table I of all comets having inclinations within each degree; e. g., *i* = 40° includes inclinations from 40°.0 to 40°.9.

Table V.— Comets arranged in order of perihelion distance, *q*, in terms of the Earth's mean distance from the Sun.

Table VI.— Comets arranged in order of semi-major axis, *a*, in terms of the Earth's mean distance from the Sun.

Table VII.— Comets arranged in order of the period of revolution, *U*, about the Sun, expressed in years.

Table VIII.— Comets arranged in order of eccentricity, *e*.

TABLE I. APPROXIMATE ELEMENTS OF ALL COMPUTED ORBITS OF COMETS FROM B. C. 372 TO A. D. 1896.

NUMBER.	T	ω	☊	i	q	a	U	e	DISCOVERER.
	B. C.								
1	371 Old Style. Winter	120.°	270° to 330°	90° to 150°	Small				
2	137 Ap. 29.	350.	220.	160.	1.010				
3	69 Jl.	150.	165.	70.	0.79				
4	12 O. 8.8	108.	28.	170.	0.583				
	A. D.								
5	66 Old Style. Ja. 14.2	67.7	32.7	139.5	0.445				
6	141 Mr. 29.1	120.9	12.8	163.0	0.720				
7	240 N. 10.	82.	189.	44.	0.372				
8	539 O. 20.6	255.5 or 75.5	58 or 238	10.0	0.341				
9	565 Jl. 14.5	79.5	159.5	121.0	0.832				
10	568 Ag. 29.3	24.3	294.2	4.1	0.907				
11	574 Ap. 7.3	15.4	128.3	46.5	0.963				
12	770 Je. 6.6	86.8	88.9	120.5	0.603				
13	837 Mr. 1.0	277.5	206.5	168 or 170	0.580				
14	961 D. 30.2	82.6	350.6	100.5	0.552				
15	989 S. 12.0	180.	84.	163.	0.568				
16	1006 Mr. 22.	93 to 94	38.	162.5	0.583				
17	1066 Ap. 1.0	120.9	25.8	163.0	0.720				
18	1092 F. 15.0	30.7	125.7	28.9	0.928				
19	1097 S. 21.9	125.0	207.5	73.5	0.738				
20	1231 Ja. 30.3	121.3	13.5	6.1	0.948				
21	1264 Jl. 19.8	159.6	140.9	16.5	0.825				
22	1299 Mr. 31.3	103.8	107.1	111.1	0.318				
23	1301 O. 24.0	186.	138.	167.	0.640				
24	1337 Je. 15.1	90.7	93.0	139.5	0.828				
25	1351 N. 26.5	π = 69.0	. . .	. . .	1.00				

TABLE I—(*Continued*).   Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T	ω	☊	i	q	a	U	e	DISCOVERER.
26	Mr. 2.3	10.	237.	148.	0.470	...	...	...	
27	O. 21.5	169.4	217.4	152.4	0.980	...	...	...	
28 H.	N. 8.8	107.8	47.3	162.1	0.583	...	...	...	
29	O. 16.3	166.7	268.5	127.8	0.774	...	...	...	
30	Mr. 21.	91.	117.	55.	0.380	...	...	...	
31	N. 7.8	189.3	96.3	104.0	0.493	...	...	...	
32	D. 9.4	356.9	261.3	155.7	0.327	...	...	...	
33 H.	Je. 8.2	104.8	43.8	162.4	0.580	17.97	75.	0.968	
34 I	Ja. 18.0	194.9	249.7	13.3	0.703	...	...	...	
35 II	Ag. 8.0	185.1	184.4	9.9	0.760	...	...	...	
36	O. 7.4	69.7	71.1	142.0	0.830	...	...	...	
37	F. 29.9	246.1	285.9	170.8	0.486	...	...	...	Regiomontanus.
38	D. 24.5	129.9	288.8	51.6	0.738	...	...	...	
39	S. 6.2	33.5	326.5	21.	0.954	...	...	...	
40	My. 17.	20.	310.	105.	1.400	...	...	...	
41	S. 3.7	242.2	132.8	135.0	0.386	...	...	...	
42 H.	Ag. 25.8	104.3	45.5	163.0	0.580	17.79	75.0	0.967	Apianus.
43	O. 18.3	24.4	87.4	32.6	0.519	...	...	...	Fracastor.
44	Je. 14.9	278.4	299.3	28.2	0.327	...	...	...	
45	Ap. 22.2	100.9	175.2	32.4	0.491	...	...	...	
46	S. 13.6	119.6	335.0	110.9	0.280	...	...	...	
47	O. 27.0	255.6	25.3	104.8	0.177	...	...	...	Tycho Brahe.
48	N. 28.5	89.3	19.1	64.6	0.602	...	...	...	Moestlin.
49	My. 6.4	333.0	229.3	119.2	0.168	...	...	...	Tycho Brahe.
50	New Style O. 8.0	331.4	37.7	6.1	1.095	...	...	...	William IV v. Hesse.

TABLE I—*(Continued).*   Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T	ω	☊	i	q	a	U	e	DISCOVERER.
51	1590 F. 8.0	307.7	165.6	150.5	0.568	...	...	...	Tycho Brahe.
52	1593 Jl. 18.6	12.1	164.2	88.0	0.089	...	...	...	Ripensis.
53 H.	1596 Jl. 25.2	59 4	330.3	128.0	0.567	...	...	...	
54 H.	1607 O. 26.7	107 0	48.7	162.8	0.588	17.87	75.5	0.967	Harriot.
55	1618 I Ag. 17.1	24.9	293.4	21.5	0.513	...	...	...	Kepler.
56	1618 II N. 8.4	287.4	75.7	37.2	0.390	...	...	...	Kirch.
57	1652 N. 12.7	300.1	88.2	79.5	0.847	...	...	...	Hevelius.
58	1661 Ja. 26.9	33.4	81.9	33.0	0.443	...	...	...	Hevelius.
59	1664 D. 4 5	310.6	81.3	158.7	1.026	...	...	...	Hevelius.
60	1665 Ap. 24.2	156.1	228.0	103.9	0.106	...	...	...	
61	1668 F. 28.8	80.3	357.3	144.0	0.005	...	...	...	Ægidius.
62	1672 Mr. 1.5	109.6	298.1	82.9	0.695	...	...	...	Hevelius.
63	1677 My. 6.0	99.2	236.8	100.9	0.281	...	...	...	Lahire.
64	1678 Ag. 18.3	159 5	163.3	2.9	1.145	3 070	5.38	0.627	Kirch.
65	1680 D. 18.0	350.6	272.2	60.7	0.006	426.7	8814.	1.000	
66 H.	1682 S. 14.8	109.3	51.2	162.3	0.583	18.17	77.5	0.968	
67	1683 Jl. 13.1	87.8	173.4	96.8	0.560	...	...	...	Flamsteed.
68	1684 Je. 8.3	330.3	268.2	65 4	0.958	...	...	...	Bianchini.
69	1686 S. 15.8	81.9	354.1	34.9	0.336	...	...	...	Richaud.
70	1689 N. 30.2	78.2	279.4	63.2	0.064	...	...	...	
71	1695 N. 9.7	204.	216.	22.	0.844	...	...	...	Jacob.
72	1698 O. 17.0	151.2	65.9	169.1	0.729	...	...	...	Lahire.
73	1699 Ja. 13.4	109.5	321.7	109.4	0.749	...	...	...	de Fontenay.
74	1701 O. 17.4	165.0	298.7	138.4	0.593	...	...	...	Pallu.
75	1702 Mr. 13.6	309.8	189.0	4.4	0.647	...	...	...	Bianchini.
76	1706 Ja. 30.2	59.4	13.2	55.2	0.427	...	...	...	Cassini.

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.		T	ω	☊	i	q	a	U	e	DISCOVERER.
77		D. 12.0	27.1	52.8	88.6	0.860	....	....	...	Manfredi.
78		Ja. 14.9	6.3	127.9	148.9	1.025	....	....	...	Kirch.
79		S. 27.6	331.4	14.2	130.0	0.999	....	....	...	
80		Je. 16.2	10.4	310.6	77.1	4.051	....	....	...	Sarabat.
81	I	Ja. 30.4	99.5	226.4	18.3	0.223	....	....	...	Zanotti.
82	II	Je. 2.2	129.9	132.1	61.9	0.835	....	....	...	Grant.
83		Je. 17.4	104.8	207.4	124.3	0.674	....	....	...	Grischow.
84		F. 8.6	328.5	185.2	112.5	0.770	....	....	...	Klinkenberg.
85	I	Ja. 8.2	6.4	86.9	1.9	0.862	3.10	6.73	0.721	Klinkenberg.
86	II	S. 20.7	119.0	6.0	134.4	0.523	....	....	...	Chéseaux.
87		Mr. 1.3	151.4	45.8	47.1	0.222	....	....	...	
88		Mr. 3.3	230.3	147.3	100.9	2.199	....	....	...	
89	I	Ap. 28.8	17.5	232.9	94.5	0.840	....	....	...	
90	II	Je. 18.9	245.6	33.1	67.1	0.625	....	....	...	Klinkenberg.
91		O. 21.4	268.5	214.1	12.7	0.339	....	....	...	Bradley.
92		Je. 11.1	36.8	230.8	68.3	0.215	....	....	...	de la Nux.
93 H.	I	Mr. 12.6	110.6	53.8	162.4	0.585	18.09	76.9	0.968	Palitzsch.
94	II	N. 27.1	273.7	139.7	79.0	0.799	...	....	...	Messier.
95	III	D. 16.8	301.4	79.8	175.1	0.966	...	....	...	
96		My. 28.3	115.5	348.6	85.6	1.009	....	....	...	Klinkenberg.
97		N. 1.9	88.6	356.4	72.5	0.498	377.	7335.	0.999	Messier.
98		F. 12.6	104.8	120.1	127.1	0.555	....	....	...	Messier.
99	I	F. 17.4	100.9	244.2	139.2	0.505	....	....	...	Messier.
100	II	Ap. 27.0	177.0	74.2	8.0	0.399	2.934	5.025	0.864	Helfenzrieder.
101		O. 7.6	329.1	175.1	40.8	0.123	163.5	2090.	0.999	Messier.

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T	ω	$\mathcal{S}$	i	q	a	U	e	DISCOVERER.
102 I	Ag. 13.5	224.3	132.0	1.6	0.674	3.163	5.626	0.786	Messier.
103 II	N. 22.2	260.3	108.7	148.6	0.528				
104	Ap. 19.1	76.1	27.9	11.3	0.902				Messier.
105 B.	F. 16.7	213.0	257.3	17.1	0.986	3.58	6.77	0.725	Montaigne.
106	S. 5.6	314.1	121.1	61.2	1.127				Messier.
107	Ag. 15.8	136.7	180.7	83.3	1.433				Montaigne.
108	Ja. 4.1	62.1	25.1	32.5	0.713				Bode.
109 I	S. 30.8	237.8	124.2	126.2	0.099				Messier.
110 II	N. 28.9	254.1	141.0	107.9	0.515				Montaigne, Olbers.
111 I	Jl. 7.2	156.2	83.0	81.7	0.776				Méchain.
112 II	N. 29.5	61.3	77.4	152.8	0.961				Méchain.
113	N. 19.9	354.6	55.7	45.1	1.459	3.260	5.888	0.552	Pigott.
114	Ja. 21.2	336.1	56.8	128.8	0.708				de la Nux.
115	Ja. 27.3	205.7	264.2	70.2	1.143				Messier, Méchain.
116 II	Ap. 8.4	127.1	64.6	92.5	0.427				Méchain.
117 E. I	Ja. 30.9	182.5	334.1	13.6	0.335	2.208	3.281	0.848	Méchain.
118 II	Jl. 8.6	323.2	195.4	51.0	0.394				C. Herschel.
119	My. 10.8	99.1	106.9	131.7	0.349				Méchain.
120 I	N. 10.3	57.8	156.9	167.5	1.063				Messier.
121 II	N. 20.3	30.4	352.4	64.5	0.757				C. Herschel.
122 I	Ja. 16.8	114.4	172.8	150.3	0.747				C. Herschel.
123 Tu. II	Ja. 30.9	207.1	268.6	54.1	1.044				Méchain.
124 III	My. 21.2	119.5	33.2	116.1	0.798	5.78	13.90	0.819	C. Herschel.
125 I	Ja. 13.5	154.4	190.7	140.2	1.293				C. Herschel.
126 II	D. 27.3	147.3	283.3	131.0	0.966				Gregory.
127 I	N. 4.8	239.8	108.5	119.7	0.403				Messier.

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T	ω	☊	i	q	a	U	e	DISCOVERER.
128	N. 19.5	69.3	2.3	51.9	1.504	...	...	...	Perny.
129 E	D. 21.4	182.0	334.7	13.7	0.334	2.213	3.292	0.849	C. Herschel.
130	Ap. 2.8	184.3	17.0	115.1	1.578	...	...	...	Olbers.
131 1797	Jl. 9.1	279.8	329.3	129.3	0.527	...	...	...	Bouvard,C.Herschel,Lee.
132 1798 I	Ap. 4.5	342.9	122.2	43.7	0.485	...	...	...	Messier.
133 1798 II	D. 31.5	215.0	249.5	137.6	0.780	...	...	...	Bouvard.
134 1799 I	S. 7.2	95.8	99.5	129.1	0.840	...	...	...	Méchain.
135 1799 II	D. 25.9	136.5	326.8	103.0	0.626	...	...	...	Méchain.
136 1801	Ag. 8.6	219.8	42.5	159.2	0.256	...	...	...	Pons, Messier.
137 1802	S. 9.9	21.9	310.3	57.0	1.094	...	...	...	Pons.
138 1804	F. 13.6	331.9	176.8	56.5	1.071	...	...	...	Pons.
139 E. 1805	N. 21.5	182.5	334.3	13.6	0.340	2.213	3.292	0.846	Bouvard, Pons, Huth.
140 B. 1806 I	Ja. 2.0	218.2	251.3	13.6	0.907	3.567	6.737	0.746	Pons.
141 1806 II	D. 28.9	225.3	322.4	145.0	1.082	...	...	1.010	Pons.
142 1807	S. 18.7	4.1	266.8	63.2	0.646	143.2	1714.	0.995	Parisi.
143 1808 I	My. 13.0	253.8	323.0	134.3	0.390	...	...	...	Pons.
144 1808 II	Jl. 12.2	131.5	24.2	140.7	0.608	...	...	...	Pons.
145 1810	O. 6.2	114.9	308.8	62.9	0.970	...	...	...	Pons.
146 1811 I	S. 12.3	65.4	140.4	107.0	1.035	212.3	3094.	0.995	Flaugergues.
147 1811 II	N. 11.0	314.4	93.0	31.3	1.582	91.51	875.	0.983	Pons.
148 1812	S. 15.3	199.3	253.0	74.0	0.777	17.5	73.	0.956	Pons.
149 1813 I	Mr. 4.5	350.9	60.8	158.8	0.699	...	...	...	Pons.
150 1813 II	My. 19.5	205.1	42.7	98.9	1.215	...	...	...	Pons.
151 O. 1815	Ap. 26.0	65.6	83.5	44.5	1.213	17.63	74.	0.931	Olbers.
152 1816	Mr. 1.4	304.3	323.2	43.1	0.049	...	...	...	Pons.

TABLE I—(Continued).　Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T		ω	☊	i	q	a	U	e	DISCOVERER.
153	1818 I	F. 3.2	180.3	256.0	34.2	0.696	....	....	....	Pons.
154	1818 II	F. 26.0	112.3	70.4	89.7	1.198	....	....	....	Pons.
155	1818 III	D. 5.0	348.2	90.0	117.0	0.855	....	....	1.012	Pons.
156 E.	1819 I	Ja. 28.0	182.4	334.6	13.6	0.335	2.214	3.295	0.849	Pons.
157	1819 II	Je. 27.7	13.4	273.7	80.7	0.341	....	....	....	Tralles.
158 W.	1819 III	Jl. 18.9	161.5	113.2	10.7	0.774	3.160	5.618	0.755	Pons.
159	1819 IV	N. 20.3	350.1	77.2	9.0	0.893	2.849	4.810	0.687	Blanpain, Pons.
160	1821	Mr. 21.5	169.2	48.7	106.4	0.092	....	....	....	Nicollet, Pons.
161 E.	1822 I	My. 5.6	344.7	177.4	126.4	0.504	....	....	....	Gambart.
162 E.	1822 II	My. 24.0	182.8	334.4	13.3	0.346	2.224	3.318	0.845	
163	1822 III	Jl. 15.9	237.7	97.7	143.7	0.847	....	....	....	Pons.
164	1822 IV	O. 23.8	181.1	92.7	127.3	1.145	309.7	5449.	0.996	Pons.
165	1823	D. 9.5	28.5	303.1	103.8	0.227	....	....	....	Köhler.
166	1824 I	Jl. 11.5	334.0	234.3	125.4	0.591	....	....	....	Rümker.
167	1824 II	S. 29.1	85.3	279.3	54.6	1.050	....	....	....	Scheithauer.
168	1825 I	My. 30.6	106.2	20.1	123.3	0.889	....	....	....	Gambart.
169 E.	1825 II	Ag. 18.7	177.3	192.9	89.7	0.883	....	....	....	Pons.
170 E.	1825 III	S. 16.3	182.8	334.5	13.4	0.345	2.233	3.315	0.845	Pons.
171	1825 IV	D. 10.7	256.9	215.7	146.5	1.241	271.4	4472.	0.995	Pons.
172 B.	1826 I	Mr. 18.4	218.3	251.5	13.6	0.903	3.561	6.720	0.747	Biela.
173	1826 II	Ap. 21.9	279.4	197.6	40.0	2.008	....	....	....	Pons.
174	1826 III	Ap. 29.0	4.7	40.5	174.7	0.188	....	....	....	Flaugergues.
175	1826 IV	O. 9.0	13.7	44.1	26.0	0.853	....	....	....	Pons.
176	1826 V	N. 18.4	279.6	235.1	90.6	0.027	....	....	....	Pons.
177	1827 I	F. 4.9	151.0	184.5	102.4	0.507	....	....	....	Pons.
178	1827 II	Je. 7.8	20.6	318.2	136.4	0.808	....	....	....	Pons, Gambart.

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T			ω	☊	i	q	a	U	e	DISCOVERER.
179 E.	1827	III	S. 11.7	258.7	149.7	125.9	0.138	189.6	2611.	0.999	Pons.
180 E.	1829		Ja. 9.7	182.8	334.5	13.3	0.346	2.224	3.316	0.845	
181	1830	I	Ap. 9.3	5.8	206.4	21.3	0.921				d'Abbadie.
182	1830	II	D. 27.7	26.9	337.9	135.2	0.126				Herapath.
183 E.	1832	I	My. 4.0	182.8	334.5	13.4	0.343	2.222	3.312	0.845	Gambart.
184	1832	II	S. 25.6	204.6	72.5	136.7	1.183				
185 B.	1832	III	N. 26.1	221.8	248.3	13.2	0.879	3.537	6.652	0.751	Dunlop.
186	1833		S. 10.4	260.9	323.5	7.3	0.464				Gambart.
187	1834		Ap. 2.8	50.2	226.6	6.0	0.513				
188	1835	I	Mr. 27.6	210.6	58.3	170.9	2.041				Boguslawski.
189 E.	1835	II	Ag. 26.4	182.8	334.6	13.4	0.344	2.223	3.314	0.845	
190 H.	1835	III	N. 15.9	110.6	55.2	162.2	0.587	17.99	76.29	0.967	
191 E.	1838	I	D. 19.0	182.8	334.6	13.4	0.344	2.222	3.313	0.845	Galle.
192	1840	I	Ja. 4.5	72.2	120.0	53.1	0.618			0.999+	Galle.
193	1840	II	Mr. 13.1	156.6	236.8	120.8	1.221	243.	3789.	0.995	Galle.
194	1840	III	Ap. 2.4	138.0	186.0	79.9	0.748				
195	1840	IV	N. 13.7	133.6	248.9	58.0	1.481	51.3	367.2	0.971	Bremiker.
196 E.	1842	I	Ap. 12.0	182.8	334.7	13.3	0.345	2.223	3.314	0.845	
197	1842	II	D. 16.0	240.5	207.8	106.4	0.504				Laugier.
198	1843	I	F. 27.4	82.6	1.3	144.3	0.006	64.03	512.	0.999+	
199	1843	II	My. 6.1	124.2	157.2	52.7	1.615				Mauvais.
200 F.	1843	III	O. 17.1	200.1	209.5	11.4	1.693	3.812	7.442	0.556	Faye.
201	1844	I	S. 2.5	278.7	63.8	2.9	1.186	3.100	5.459	0.617	de Vico.
202	1844	II	O. 17.4	211.3	31.7	131.4	0.855				Mauvais.
203	1844	III	D. 13.7	177.7	118.3	45.6	0.252			1.000+	

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.		T		ω	☊	i	q	a	U	e	DISCOVERER.
204	1845	I	Ja. 8.2	114.6	336.7	46.9	0.905	...	...	...	d'Arrest.
205	1845	II	Ap. 21.0	205.4	347.1	56.4	1.255	...	...	0.990	de Vico.
206	1845	III	Je. 5.7	75.8	337.8	131.3	0.402	39.66	249.8	0.847	Colla.
207 E.	1845	IV	Ag. 9.6	183.4	334.3	13.1	0.338	2.216	3.300	0.992	de Vico.
208	1846	I	Ja. 22.1	338.0	111.1	47.4	1.481	194.9	2721.	0.757	
209 B.A	1846	II	F. 11.0	223.1	245.9	12.6	0.856	3.520	6.603	0.757	
209 B.B	1846	II	F. 11.1	223.1	245.9	12.6	0.856	3.519	6.601	0.793	
210 Br.	1846	III	F. 25.4	13.8	102.7	30.9	0.650	3.142	5.569		Brorsen.
211	1846	IV	Mr. 5.6	12.9	77.6	85.1	0.664	17.90	75.7	0.963	de Vico.
212	1846	V	My. 27.9	78.7	161.3	122.4	1.376	...	...	...	de Vico, Hind.
213	1846	VI	Je. 1.1	339.6	260.4	30.7	1.529	5.635	13.38	0.729	Peters.
214	1846	VII	Je. 5.5	99.8	261.9	150.7	0.634	62.99	500.	0.990	Brorsen.
215	1846	VIII	O. 29.8	94.0	4.7	49.7	0.831	...	...	...	de Vico.
216	1847		Mr. 30.3	254.3	21.7	48.6	0.043	470.9	10219.	0.999+	Hind.
217	1847	II	Je. 4.7	32.3	174.0	100.4	2.115	...	...	...	Colla.
218	1847	III	Ag. 9.3	91.5	338.3	96.6	1.767	1251.	44229.	0.999	Mauvais.
219	1847	IV	Ag. 9.4	55.4	76.7	147.4	1.485	...	...	...	Schweizer.
220	1847	V	S. 9.5	129.3	309.8	19.1	0.488	18.7	81.1	0.974	Brorsen.
221	1847	VI	N. 14.4	276.6	190.8	108.2	0.329	...	...	1.000+	Miss Mitchell.
222	1848	I	S. 8.1	261.0	211.5	95.6	0.320	...	...	...	Petersen.
223 E.	1848	I	N. 26.1	183.4	334.4	13.1	0.337	2.215	3.296	0.848	
224	1849	I	Ja. 19.4	208.0	215.2	85.0	0.960	...	...	...	Petersen.
225	1849	II	My. 26.5	33.2	202.5	67.2	1.160	...	...	1.001	Goujon.
226	1849	III	Je. 8.2	236.6	30.5	66.9	0.894	412.	8375.	0.998	Schweizer.
227	1850	I	Jl. 23.5	180.5	92.9	68.2	1.081	942.	28909.	0.999	Petersen.
228	1850	II	O. 19.3	243.2	206.0	40.1	0.565	...	...	...	Bond.

TABLE I—(*Continued*).   Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T		ω	☊	i	q	a	U	e	DISCOVERER.
229 F.	1851 I	Ap. 1.9	200.2	209.5	11.4	1.700	3.819	7.462	0.555	d'Arrest.
230 d'A.	1851 II	Jl. 8.7	174.5	148.4	13.9	1.173	3.444	6.390	0.659	d'Arrest.
231	1851 III	Ag. 26.2	87.3	223.7	38.2	0.984	313.	5544.	0.997	Brorsen.
232	1851 IV	S. 30.8	294.4	44.4	74.0	0.142	. . .	. . .	. . .	Brorsen.
233 E.	1852 I	Mr. 14.7	183.5	334.4	13.1	0.337	2.215	3.297	0.848	Chacornac.
234	1852 II	Ap. 19.6	37.2	317.2	131.1	0.905	. . .	. . .	. . .	
235 B.ᴬ	1852 III	S. 23.7	223.3	245.9	12.6	0.861	3.526	6.621	0.756	
235 B.ᴮ	1852 IV	S. 23.1	223.3	245.9	12.6	0.861	3.525	6.619	0.756	
236	1852	O. 12.8	57.1	346.2	40.9	1.250	15.44	60.7	0.919	Westphal.
237	1853 I	F. 24.0	275.8	69.6	159.7	1.092	. . .	. . .	. . .	Secchi.
238	1853 II	My. 9.8	199.2	41.0	122.2	0.909	84.9	782.3	0.989	Schweizer.
239	1853 III	S. 1.7	170.4	140.5	61.5	0.307	. . .	. . .	. . .	Klinkerfues.
240	1853 IV	O. 16.6	277.8	220.1	119.0	0.173	. . .	. . .	1.001	Bruhns.
241	1854 I	Ja. 3.9	170.9	227.0	113.9	2.045	. . .	. . .	. . .	van Arsdale.
242	1854 II	Mr. 24.0	101.6	315.5	97.5	0.277	. . .	. . .	. . .	
243	1854 III	Je. 22.0	74.6	347.7	108.7	0.648	. . .	. . .	. . .	Klinkerfues.
244	1854 IV	O. 27.5	129.9	324.5	40.9	0.799	119.6	1309.	0.993	Klinkerfues.
245	1854 V	D. 15.7	287.0	238.1	14.2	1.358	99.6	994.2	0.986	Winnecke, Dien.
246	1855 I	F. 5.1	323.1	189.7	128.6	2.194	63.	500.	0.965	Schweizer.
247	1855 II	My. 30.2	22.6	260.3	156.9	0.567	. . .	. . .	. . .	Donati.
248 E.	1855 III	Jl. 1.2	183.4	334.4	13.1	0.337	2.215	3.295	0.848	
249	1855 IV	N. 25.4	325.5	51.6	169.8	1.231	. . .	. . .	. . .	Bruhns.
250	1857 I	Mr. 21.4	121.6	313.2	87.9	0.772	. . .	. . .	. . .	d'Arrest.
251 Br.	1857 II	Mr. 29.3	14.0	101.8	29.8	0.621	3.130	5.538	0.802	Bruhns.
252	1857 III	Jl. 18.0	134.1	23.7	121.0	0.367	. . .	. . .	. . .	Klinkerfues.

TABLE I—(*Continued*).   Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.			T	ω	☊	i	q	a	U	e	DISCOVERER.
253	1857	IV	Ag. 24.0	181.0	200.8	32.8	0.747	38.05	235.	0.980	Peters.
254	1857	V	S. 30.9	124.8	15.0	123.9	0.563	182.	2463.	0.997	Klinkerfues.
255	1857	VI	N. 19.1	95.1	139.3	142.2	1.009	335.	6143.	0.997	Donati, van Arsdale.
256 d'A.	1857	VII	N. 28.2	174.6	148.5	13.9	1.170		6.380	0.660	
257 Tu.	1858	I	F. 23.5	206.8	269.1	54.4	1.025	3.440	13.74	0.821	Tuttle.
258 W.	1858	II	My. 2.0	162.1	113.5	10.8	0.769	5.736	5.555	0.755	Winnecke.
259	1858	III	My. 3.0	25.7	175.1	19.5	1.149	3.137	6.609	0.674	Tuttle.
260	1858	IV	Je. 5.3	98.9	325.0	100.0	0.544	3.523			Bruhns.
261 F.	1858	V	S. 12.9	200.2	209.7	11.4	1.694	3.813	7.445	0.556	Donati.
262	1858	VI	S. 30.0	129.1	165.3	117.0	0.578	152.3	1880.	0.996	Tuttle.
263	1858	VII	O. 12.8	155.6	159.8	158.7	1.427	330.	6000.	0.996	
264 E.	1858	VIII	O. 18.4	183.5	334.5	13.1	0.341	2.218	3.304	0.846	Tempel.
265	1859		My. 29.2	282.0	357.3	95.5	0.201				Liais.
266*	1860	I	F. 16.7	209.7	324.1	79.6	1.197				Rümker.
267	1860	II	Mr. 5.6	41.2	8.9	48.2	1.307				
268	1860	III	Je. 16.1	76.9	84.7	79.3	0.293				Tempel.
269	1860	IV	S. 22.3	312.0	44.9	32.2	0.683				Thatcher.
270	1861	I	Je. 3.4	213.4	29.9	79.8	0.921	55.68	415.	0.983	
271	1861	II	Je. 11.5	330.1	279.0	85.4	0.822	55.1	409.1	0.985	Tebbutt.
272	1861	III	D. 7.2	331.6	145.1	138.0	0.839				Tuttle.
273 E.	1862	I	F. 6.3	183.5	334.5	13.1	0.340	2.217	3.302	0.847	Schmidt, Tempel.
274	1862	II	Je. 22.0	27.2	326.6	172.1	0.981				Tuttle.
275	1862	III	Ag. 22.9	152.8	137.5	113.6	0.963	24.28	119.6	0.960	Respighi.
276	1862	IV	D. 28.2	230.6	355.8	137.5	0.803				Bruhns.
277	1863	I	F. 3.5	74.5	116.9	85.4	0.795				Klinkerfues.
278	1863	II	Ap. 4.9	4.0	251.3	112.6	1.068				

* Double comet.

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.		T	ω	☊	i	q	a	U	e	DISCOVERER.
279	1863 III	Ap. 20.9	55.6	250.2	85.5	0.629	....	....	....	Respighi.
280	1863 IV	N. 9.5	357.2	97.5	78.1	0.707	....	....	....	Tempel.
281	1863 V	D. 27.8	115.7	304.7	64.5	0.772	....	....	....	Respighi.
282	1863 VI	D. 29.2	78.1	105.0	83.3	1.313	....	....	....	Bäker.
283	1864 I	Jl. 27.8	346.1	175.0	135.0	0.626	....	....	....	Donati.
284	1864 II	Ag. 15.6	151.0	95.2	178.1	0.909	249.	3934.	0.996	Tempel.
285	1864 III	O. 11.4	232.5	31.8	109.7	0.931	....	....	....	Donati, Toussaint.
286	1864 IV	D. 22.5	118.5	203.2	48.9	0.771	....	....	....	Bäker.
287	1864 V	D. 27.7	178.5	340.9	162.9	1.115	....	....	....	Bruhns.
288	1865 I	Ja. 14.3	111.7	252.9	92.5	0.026	....	....	....	Abbott.
289 E.	1865 II	My. 27.9	183.5	334.5	13.1	0.341	2.218	3.304	0.846	
290	1866 I	Ja. 11.1	171.0	231.4	162.7	0.977	10.32	33.18	0.905	Tempel.
291 F.	1866 II	F. 14.0	200.2	209.7	11.4	1.682	3.802	7.413	0.558	
292	1867 I	Ja. 20.2	357.5	78.5	18.2	1.577	11.71	40.09	0.865	Stephan.
293 T$_1$	1867 II	My. 23.9	135.0	101.2	6.4	1.563	3.189	5.695	0.510	Tempel.
294	1867 III	N. 7.0	148.6	65.0	96.6	0.330	....	....	....	Bäker.
295 Br.	1868 I	Ap. 17.4	14.8	101.2	29.4	0.597	3.109	5.482	0.808	
296	1868 II	Je. 26.5	126.6	52.3	131.5	0.579	....	....	....	Winnecke.
297 E.	1868 III	S. 14.6	183.7	334.5	13.1	0.334	2.212	3.289	0.849	
298 W.	1869 I	Je. 29.9	162.4	113.6	10.8	0.781	3.150	5.592	0.752	
299	1869 II	O. 9.9	188.2	311.5	111.7	1.231	....	....	....	Tempel.
300 T$_3$-S.	1869 III	N. 18.8	106.2	296.8	5.4	1.063	3.109	5.483	0.658	Tempel, Swift.
301	1870 I	Jl. 14.1	198.2	141.7	121.8	1.009	....	....	....	Winnecke, Tempel.
302	1870 II	S. 2.2	354.9	12.9	99.3	1.817	....	....	....	Coggia.
303 d'A.	1870 III	S. 22.7	172.3	146.4	15.7	1.280	3.507	6.57	0.635	

TABLE I—(*Continued*).   Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T		ω	☊	i	q	a	U	e	DISCOVERER.
304	1870 IV	D. 19.9	90.6	94.7	147.3	0.389	....	....	....	Winnecke.
305	1871 I	Je. 10.6	222.5	279.3	87.6	0.654	299.	5178.	0.998	Winnecke, Borelly, Swift.
306	1871 II	Jl. 27.0	96.3	211.9	102.0	1.083	....	....	....	Tempel.
307 Tu.	1871 III	D. 1.8	206.8	269.3	54.3	1.030	5.757	13.811	0.821	
308	1871 IV	D. 20.4	242.9	147.1	98.3	0.691	193.5	2691.	0.996	Tempel.
309 E.	1871 V	D. 28.8	183.6	334.6	13.1	0.333	2.210	3.285	0.849	
310 T₁	1873 I	My. 9.8	159.3	78.7	9.8	1.771	3.296	5.984	0.463	
311 T₂	1873 II	Je. 25.2	185.2	120.9	12.8	1.344	3.004	5.207	0.553	Tempel.
312 F.	1873 III	Jl. 18.5	200.4	209.6	11.4	1.683	3.801	7.412	0.557	
313 .	1873 IV	S. 10.8	193.8	230.6	96.0	0.794	225.	3375.	0.996	Borelly.
314	1873 V	O. 1.8	233.8	176.7	121.5	0.385	....	....	....	Henry.
315 Br.	1873 VI	O. 10.5	14.8	101.2	29.4	0.594	3.106	5.475	0.809	
316	1873 VII	D. 1.4	195.6	250.5	29.9	0.733	....	....	....	Coggia, Winnecke.
317	1874 I	Mr. 9.9	269.5	30.3	58.9	0.045	....	....	....	Winnecke.
318	1874 II	Mr. 13.9	331.7	274.1	148.4	0.886	....	....	....	Winnecke, Borrelly.
319	1874 III	Jl. 8.9	152.4	118.7	66.4	0.676	573.	13708.	0.999	Coggia.
320	1874 IV	Jl. 17.7	149.6	215.9	34.1	1.688	45.4	306.0	0.963	Coggia.
321	1874 V	Ag. 26.9	92.6	251.5	41.8	0.983	841.	24368.	0.999	Borelly.
322	1874 VI	O. 18.9	16.3	282.0	99.2	0.508	....	....	....	Borelly.
323 W.	1875 I	Mr. 12.1	165.1	111.6	11.3	0.829	3.201	5.726	0.741	
324 E.	1875 II	Ap. 13.0	183.7	334.6	13.1	0.333	2.211	3.287	0.849	
325	1877 I	Ja. 19.2	347.2	187.3	153.0	0.807	....	....	....	Borelly, Pechüle.
326	1877 II	Ap. 17.7	63.1	316.6	121.1	0.950	....	....	....	Winnecke, Block.
327	1877 III	Ap. 26.8	116.8	346.1	77.2	1.009	486.	10718.	0.998	Swift, Block, Borelly.
328 d'A.	1877 IV	My. 10.5	173.0	146.2	15.7	1.318	3.541	6.664	0.628	
329	1877 V	Je. 27.1	103.2	184.3	115.7	1.070	....	....	....	Tempel.

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T			ω	☊	i	q	a	U	e	DISCOVERER.
	1877	VI	S. 11.2								
330	1877	VI	S. 11.2	143.2	251.0	102.2	1.576	...	...	...	Coggia.
331	1878	I	Jl. 20.7	177.6	102.3	78.2	1.392	...	...	...	Swift.
332 E.	1878	II	Jl. 26.2	183.7	334.7	13.1	0.333	2.212	3.285	0.849	
333 T₂	1878	III	S. 7.3	185.1	121.0	12.8	1.340	3.001	5.202	0.554	
334 Br.	1879	I	Mr. 30.5	14.9	101.3	29.4	0.590	3.101	5.470	0.810	
335	1879	II	Ap. 27.4	3.7	45.8	107.0	0.897	...	...	...	Swift.
336 T₁	1879	III	My. 7.1	159.5	78.8	9.8	1.771	3.295	5.982	0.463	
337	1879	IV	Ag. 29.3	84.3	32.4	107.8	0.991	...	...	...	Hartwig.
338	1879	V	O. 4.6	115.4	87.2	77.1	0.990	...	...	...	Palisa.
339	1880	I	Ja. 27.6	86.3	6.2	144.7	0.005	...	...	...	Gould.
340	1880	II	Jl. 1.7	145.2	257.3	123.1	1.814	...	...	...	Schaeberle.
341	1880	III	S. 6.9	323.1	45.3	141.9	0.355	...	...	...	Hartwig.
342 T₃-S.	1880	IV	N. 8.0	106.2	296.9	5.4	1.067	3.113	5.493	0.657	Swift.
343	1880	V	N. 9.4	11.7	249.4	60.7	0.660	...	...	...	Pechüle.
344 F.	1881	I	Ja. 22.7	201.2	209.6	11.3	1.738	3.854	7.566	0.549	
345	1881	II	My. 20.4	173.8	126.4	78.0	0.591	...	...	...	Swift.
346	1881	III	Je. 16.4	354.3	271.0	63.4	0.734	206.	2954.	0.996	Tebbutt.
347	1881	IV	Ag. 22.3	122.1	97.0	140.2	0.634	...	...	...	Schaeberle.
348	1881	V	S. 13.3	312.5	65.9	6.9	0.725	4.226	8.687	0.828	Denning.
349	1881	VI	S. 14.4	6.3	274.2	112.8	0.449	...	...	...	Barnard.
350 E.	1881	VII	N. 15.3	183.9	334.6	12.9	0.343	2.221	3.310	0.845	
351	1881	VIII	N. 19.8	118.0	181.4	144.8	1.923	72.1	612.3	0.973	Swift.
352	1882	I	Je. 10.5	209.0	204.9	73.8	0.061	...	...	0.999+	Wells.
353	1882	II	S. 17.2	69.6	346.0	142.0	0.008	84.	772.	0.999+	
354	1882	III	N. 13.0	254.3	249.1	96.2	0.955	1239.	43601.	0.999	Barnard.

TABLE I—*(Continued).* Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T			ω	☊	i	q	a	U	e	DISCOVERER.
355	1883	I	F. 18.9	110.9	278.1	78.1	0.760	831.	23946.	0.999+	Brooks.
356	1883	II	D. 25.3	138.7	264.4	115.0	0.310	. . .	. . .	. . .	Ross.
357 P-Bs.	1884	I	Ja. 25.7	199.2	254.1	74.0	0.776	17.2	71.56	0.955	Brooks.
358	1884	II	Ag. 16.5	301.0	5.1	5.5	1.279	3.078	5.400	0.584	Barnard.
359 Wo.	1884	III	N. 17.8	172.7	206.3	25.3	1.571	3.580	6.774	0.561	Wolf.
360 E.	1885	I	Mr. 7.6	183.9	334.6	12.9	0.342	2.220	3.307	0.846	Barnard.
361	1885	II	Ag. 5.7	178.5	92.3	80.6	2.507	. . .	. . .	. . .	Barnard.
362	1885	III	Ag. 10.4	43.4	204.5	59.3	0.755	. . .	. . .	. . .	Brooks.
363 Tu.	1885	IV	S. 11.1	206.8	269.7	54.3	1.024	5.742	13.76	0.822	
364	1885	V	N. 25.5	35.6	262.2	42.4	1.080	. . .	. . .	. . .	Brooks.
365	1886	I	Ap. 6.0	126.6	36.4	82.6	0.642	. . .	. . .	. . .	Fabry.
366	1886	II	My. 3.3	119.6	68.3	84.4	0.479	. . .	. . .	1.0002	Barnard.
367	1886	III	My. 4.5	38.6	287.8	100.2	0.842	. . .	. . .	. . .	Brooks.
368	1886	IV	Je. 6.7	176.8	53.5	12.7	1.327	3.152	5.595	0.579	Brooks.
369	1886	V	Je. 7.4	201.2	192.7	87.7	0.270	. . .	. . .	. . .	Brooks.
370 W.	1886	VI	S. 4.4	172.0	104.1	14.5	0.885	3.234	5.816	0.726	Brooks.
371 Fi.	1886	VII	N. 22.4	315.1	52.5	3.0	0.998	3.536	6.648	0.718	Finlay.
372	1886	VIII	N. 28.4	31.9	258.2	85.6	1.480	. . .	. . .	. . .	Barnard.
373	1886	IX	D. 16.5	86.3	137.4	101.6	0.663	. . .	. . .	. . .	Barnard.
374	1887	I	Ja. 11.3	65.4	339.6	137.6	0.005	. . .	. . .	. . .	Thome.
375	1887	II	Mr. 17.4	159.4	279.9	104.3	1.630	106.	1090.	0.984	Brooks.
376	1887	III	Mr. 28.4	36.5	135.5	139.8	1.007	. . .	. . .	1.0004	Barnard.
377	1887	IV	Je. 16.7	15.1	245.2	17.6	1.394	356.	6725.	0.996	Barnard.
378 O.	1887	V	O. 8.5	65.3	84.5	44.6	1.199	17.41	72.65	0.931	
379	1888	I	Mr. 17.0	359.9	245.4	42.3	0.699	168.	2182.	0.996	Barnard.
380 E.	1888	II	Je. 28.0	184.0	334.6	12.9	0.343	2.220	3.308	0.845	Sawerthal.

TABLE I—(*Continued*). Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.		T		ω	☌	i	q	a	U	e	DISCOVERER.
381	1888 III	Jl. 31.1		59.2	101.5	74.2	0.902				Brooks.
382 F.	1888 IV	Ag. 19.9		201.2	209.6	11.3	1.738	3.854	7.566	0.549	Barnard.
383	1888 V	S. 13.0		291.1	137.6	56.4	1.533				Barnard.
384	1889 I	Ja. 31.2		340.5	357.4	166.4	1.814				Barnard.
385	1889 II	Je. 10.8		236.1	310.7	163.8	2.255			0.957	Barnard.
386	1889 III	Je. 20.8		60.1	271.0	31.2	1.103	25.5	128.3	0.996	Davidson.
387	1889 IV	Jl. 19.3		345.9	286.2	66.0	1.040	258.	5127.		Brooks.
388	1889 V	S. 30.3		343.6	18.0	6.1	1.950	3.684	7.072	0.471	Swift.
389	1889 VI	N. 29.5		69.7	330.6	10.2	1.354	4.176	8.534	0.676	Borelly.
390	1890 I	Ja. 26.5		199.9	8.4	56.7	0.270				
391	1890 II	Je. 1.5		68.9	320.3	120.6	1.907				Brooks.
392	1890 III	Jl. 8.5		85.7	14.3	63.3	0.764				Coggia.
393	1890 IV	Ag. 7.2		331.4	85.4	154.3	2.047	3.551	6.691	0.627	Zona.
394 d'A.	1890 V	S. 17.5		173.0	146.3	15.7	1.324				
395	1890 VI	S. 24.5		163.0	100.1	98.9	1.260				Denning.
396	1890 VII	O. 26.1		13.1	45.1	12.9	1.818	3.448	6.402	0.473	Spitaler.
397	1891 I	Ap. 27.5		178.9	193.9	120.5	0.397				Barnard.
398 Wo.	1891 II	S. 3.4		172.8	206.4	25.2	1.593	3.597	6.821	0.557	
399 E.	1891 III	O. 18.0		184.0	334.7	12.9	0.340	2.218	3.303	0.846	
400	1891 IV	N. 12.9		268.6	217.6	77.7	0.977				Barnard.
401 Ts-S.	1891 V	N. 15.0		106.7	296.5	5.4	1.087	3.129	5.534	0.653	Swift.
402	1892 I	Ap. 6.7		24.5	240.9	38.7	1.027	740.	20143.	0.999	Denning.
403	1892 II	My. 11.2		129.3	253.4	89.7	1.971				Holmes.
404	1892 III	Je. 13.2		14.2	331.7	20.8	2.139	3.626	6.904	0.410	
405 W.	1892 IV	Je. 30.9		172.1	104.1	14.5	0.887	3.235	5.818	0.726	
406	1892 V	D. 11.1		170.3	206.7	31.2	1.428	3.384	6.226	0.578	Barnard.

TABLE I—*(Continued)*. Approximate elements of all computed orbits of comets from B. C. 372 to A. D. 1896.

NUMBER.	T		ω	☊	i	q	a	U	e	DISCOVERER.
407	1892 VI	D. 28.1	252.7	264.5	24.8	0.976	....	....	....	Brooks.
408	1893 I	Ja. 6.5	85.2	185.6	143.9	1.195	....	....	....	Brooks.
409	1893 II	Jl. 7.3	47.1	337.4	160.0	0.675	1254.	44409.	0.999+	Sperra.
410 Fi.	1893 III	Jl. 12.2	315.5	52.5	3.0	0.989	3.526	6.622	0.720	
411	1893 IV	S. 19.3	347.7	174.9	129.8	0.815	....	....	....	Brooks.
412	1894 I	F. 9.5	46.3	84.4	5.5	1.148	3.804	7.42	0.698	Denning.
413	1894 II	Ap. 13.5	324.3	206.3	87.1	0.983	....	....	....	Gale.
414 T_2	1894 III	Ap. 23.2	185.1	121.2	12.7	1.351	3.008	5.218	0.551	
415*	1894 IV	O. 12.2	296.6	48.7	3.0	1.392	3.252	5.863	0.572	E. Swift.
416 E.	1895 I	F. 4.7	184.0	334.7	12.9	0.341	2.218	3.303	0.846	
417	1895 II	Ag. 20.9	167.8	170.3	3.0	1.296	3.680	7.059	0.648	Swift.
418	1895 III	O. 21.1	298.8	83.1	76.2	0.843	....	....	....	Brooks.
419	1895 IV	D. 18.4	272.7	320.5	141.6	0.192	....	....	....	Perrine.

TABLE II. COMETS ARRANGED IN ORDER OF ω.

ω	NUMBERS.			
0° to 5°	335	278	142	174
5 10	181	78	349	85
10 15	26	80	343	52
	211	396	157	175
	Br.	404		
15 20	377	11	322	89
20 25	40	178	137	247
	10	43	402	55

ω	NUMBERS.			
25° to 30°	259	182	77	274
30 35	165	18	372	217
35 40	121	58	39	234
	225	376	92	
	364			
40 45	367			
45 50	267	362		
	412	409		

ω	NUMBERS.			
50° to 55°	187	279	236	120
55 60	219	53	76	
60 65	381	112	108	326
65 70	386	O.	146	5
	391	374	353	36
70 75	389	128		
	192	277	243	

* De Vico's Comet of 1844.

TABLE II—(Continued). Comets arranged in order of ω.

ω	NUMBERS			
75° to 80°	8	206	104	268
	282	70	212	9
80 85	61	69	7	14
	198	337		
85 90	408	167	392	339
	373	12	231	67
	97	48		
90 95	304	24	30	218
	321	16	215	
95 100	255	134	3c6	260
	119	63	81	214
100 105	99	45	242	329
	22	H.	83	98
105 110	168	T₃S.	H.	4
	73	62		
110 115	H.	H.	288	154
	122	355	145	
115 120	338	204	281	327
	351	96	86	124
	366	286		
120 125	1	46	17	20
	250	6	199	254
125 130	19	347	365	116
	262	296	220	38
	82	403		
130 135	144	244	252	
135 140	T₁	195	107	194
	356	135		
140 145	330			
145 150	340	126	294	320

ω	NUMBERS			
150° to 155°	3	177	284	72
	87	319	275	125
155 160	263	60	111	193
	T₁	375	64	21
160 165	W.	395	74	
165 170	29	417	160	27
170 175	406	239	241	290
	W.	d'A.	Wo.	345
175 180	368	100	169	331
	203	361	287	397
180 185	15	153	227	253
	164	E.	130	
185 190	T₂	35	23	299
	31			
190 195	313	34		
195 200	316	301	238	P-Bs.
200 205	390			
	F.	71	369	184
205 210	150	205	115	Tu
210 215	224	352	266	
215 220	188	202	B.	270
220 225	133	B.	136	
225 230	B.	305	102	
230 235	141	276	285	314
235 240	88	226	163	109
	385			
240 245	127			
	197	41	308	228
245 250	90	37		
250 255	407	143	110	216

ω	NUMBERS			
250° to 255°	354			
255 260	8			
260 265	103	47	171	179
	91	186	222	
265 270	419	400	317	
270 275	237	94		
275 280	44	221	13	240
	131	201	173	176
	265			
280 285	245	56		
285 290	383	232		
290 295	415	418		
295 300	57	358	95	152
300 305	51	75		
305 310	59	269	348	1c6
310 315	147			
	Fi.			
315 320	246	341	118	
320 325	413			
	249	84	101	79
325 330	271	68	50	138
330 335	393	272	318	
	49	166		
335 340	114	208	213	161
340 345	384	132	388	411
345 350	387	283	325	
	155			
350 355	2	159	65	149
355 360	346	113	302	
	32	280	292	379

TABLE III. COMETS ARRANGED IN ORDER OF ☊.

Section 1 — ☊ 0° to 90°

☊	Numbers
0° to 5°	198, 358, 267, 128, 86, 215, 339, 390
5 to 10	6, 20
10 to 15	302, 76
15 to 20	79, 392, 254, 144
20 to 25	130, 388, 48, 104
25 to 30	168, 216, 252, 17
30 to 35	108, 4, 317, 47, 202, 285, 124
35 to 40	337, 270, 226, 90, 150
40 to 45	365, 5, 50, 16, 269
45 to 50	174, H., 238, 175, 136, 232, 87
50 to 55	396, 341, 160, 415, 296, Fi.
55 to 60	335, H., 249, 368, 113, 114, 8
60 to 65	77, H., 188
65 to 70	149, 201, 116, 294
70 to 75	72, 348, 366, 237
75 to 80	154, 56, 36, 184, 159, 100, 112
80 to 85	211, 219, Γ.₁, 95
85 to 90	59, O., 393, 58, 15, 85, 111, 412, 338, 418, 268, 43

Section 2 — ☊ 85° to 180°

☊	Numbers
85° to 90°	57, 155, 24, 12, 361, 164, 304, 227, 280
95	284, 147, 347
100	163, 31
105	395, 134, Br., T₁, 381
110	331, W., 22, 127
115	282, 119
120	103, W.
125	208, 30, 203, 319
130	277, 192, 98, T₂, 106, 132
135	109
140	18, 345, 78, 11
145	102, 82, 41
150	376, 373, 275, 383
155	23, 255, 94
160	146, 239, 21, 110
165	301, 272, d'A., 308, 88
170	179
175	120, 212, 262, 417, 411, 199, 64, 51, 122, 283, 9, 52, 67, 263, 3, 217

Section 3 — ☊ 175° to 360°

☊	Numbers
175° to 180°	101, 259, 45, 314
185	138, 161, 329, 35
190	107, 351, 194, 325
195	177, 84, 408, 75, 246, 369, 169
200	7, 125, 221, 173, 286
205	397, 118, 225, 413, 362, 181
210	253, 352, 228, 406, F., Wo., 83, 19
215	13, 197, 306, 171, 91, 320, 71
220	222, 224, 400, 2, 60
225	27, 231, 241, 89
230	240, 81, 187, 290
235	49, 313, 166, 92, 193, 26
240	176, 63, 245, B.
245	8, 99, 133, 195
250	402, 377, 354, 279, 379, 343, 316, 330, 34, 278

TABLE III—(Continued). Comets arranged in order of ☊.

☊	Numbers				
250° to 255°	321	P-B₈	403	B. 288	148
255 260	153	340	B.	372	
260 265	247	213	32	214	
265 270	364	115	356	407	
	142	68	29	Tu.	
270 275	1	346	386	65	
	157	318	349		
275 280	355	271	167	305	
280 285	70	375			
	322	126			

☊	Numbers			
285° to 290°	37	387	367	38
290 295	55	10	74	44
295 300	Tₛ-S.	62	40	299
300 305	165	281	385	
305 310	145	220		
310 315	137	80		
	250		234	178
315 320	242	326	73	141
320 325	391	419	186	266
	143	152		
	244			

☊	Numbers			
325° to 330°	260	39	274	135
	131	1		
330 335	53	389	404	E.
335 340	46	204	409	206
	182	218	374	
340 345	287	327	236	205
345 350	353	96		
	243	121	69	
350 355	14	97	61	265
355 360	276			
	384			

TABLE IV. COMETS ARRANGED IN ORDER OF i.

i	Numbers			
0°	.....	.....		
1	102	85		
2	64	201		
3	415	Fi.	417	
4	10	75	412	
5	Tₛ-S.	358	50	388
6	187	20		
7	T₁	348	186	

i	Numbers			
8°	100	T₁	35	
9	159	389	W.	
10	8	W.	F.	368
11	104	B.ᴬ	B.ᴮ	396
12	91	T₂	E.	
13	E.	B.	34	
14	245	W.	d'A.	

i	Numbers		
15°	d'A.	21	
16	B.		
17	292	377	
18	220	81	
19	259		
20	404	181	55
21	39		
22	71		

TABLE IV—(Continued).   Comets arranged in order of i.

i	Numbers.			
23°	.	.	.	
24	407	.	.	
25	Wo.	.		
26	175	.		
27	.	.		
28	44	18		
29	Br.	316		
30	213	Br.		
31	386	406	147	
32	269	45	108	43
33	253	.		
34	58	.		
35	320	153	69	
36	.	.		
37	56	.		
38	231	402		
39	.	.		
40	173	228	101	236
41	244			
42	321	364		
43	379	132		
44	152	O.		
45	7			
46	113	203		
	11	204		

i	Numbers.			
47°	87	208	286	
48	267	216		
49	215			
50	.	.		
51	118	38	128	
52	199			
53	192			
54	Tu.	167		
55	30	76		
56	383	205	138	390
57	137			
58	195	317		
59	362			
60	65	343		
61	106	239	82	
62	145			
63	142	70	392	346
64	121	281	48	
65	68			
66	387	319	226	
67	90	225		
68	227	92		
69	.	.		
70	3	115		
71	.	.		

i	Numbers.			
72°	97			
73	19	352	232	381
74	148	P-B$_8$		
75	.	.		
76	418	.		
77	80	338	327	400
78	345	355	280	331
79	94	268	57	266
80	270	194		
81	361	157		
82	111			
83	365	62		
84	282	107		
85	366			
86	224	211	271	277
87	279	96	372	
88	413	305	369	250
89	52	77		
	154	169	403	
90				
91	1	176		
92	.	.		
93	288	116		

TABLE IV—(Continued). Comets arranged in order of i.

i	NUMBERS				
94°	89				
95	265	222			
96	313	354	242	294	218
97	67				
98	308	150		395	
99	322	302			
100	260	367		217	14
101	88	63			
102	373				
103	306	330	177		
104	135	165	60		
105	31	375	47		
106	40				
107	197	160			
108	146	335		337	110
109	221	243			
110	73	285			
111	46				
112	22	299			
113	84	278	349		
114	275	241			
115		130	329		
116	356				
117	124	155			
118	262				
119°	240	49	127		
120	12	397	391	193	
121	252	9	326	314	
122	301				
123	238	212			
124	340	168	254		
125	83				
126	166				
127	109	179			
128	98	161	29		
129	53	164	114		
130	134	246	411		
131	79	131			
132	126	234	206	202	
133	296	119			
134	143	86	182		
135	41	283			
136	178	184			
137	276	133	374		
138	272	74			
139	99	24	5	376	
140	125	347	144		
141	419	341			
142°	36	353	255		
143	163	408			
144	61	198	339	351	
145	141				
146	171				
147	304	219			
148	26	318	103	78	
149					
150	1	122	51	214	
151					
152	27	112			
153	325				
154	393				
155	32				
156	247				
157					
158	59	263	149		
159	136	237			
160	2	409			
161					
162	H.	16	290	287	
163	15	H.	17	6	
164	385				

TABLE IV—(Continued). Comets arranged in order of i.

i	NUMBERS					
165°	.	.	.	.	.	
166	384					
167	23	120				
168	13					
169	72	249				
170°	13	4	. . .	37	188	
171	.	.	.			
172	274					
173	.	.	.			
174	174					
175°	95	.	.	.	.	.
176	.	.	.	.	.	.
177	.	.	.	.	.	.
178	284	.	.	.	.	
179	.	.	.			

TABLE V. COMETS ARRANGED IN ORDER OF q.

q	NUMBERS			
0.00 to 0.05	1	61	374	339
	65	198	353	288
	176	216	317	152
	352	70	52	160
.10	109			
	60	101	182	179
.15	232			
	49	240	47	174
.20	419			
	265	92	87	81
.25	165			
	203	136	369	390
.30	242	46	63	268
	239	356	22	222
.35	44	32	221	294

q	NUMBERS			
0.30 to 0.35	E.	69	91	157
	8	119		
.35	341	252	7	30
	314	41	304	56
.40	143	118	397	100
	206	127	116	76
.45				
.50	58	5	349	
	186	26	366	132
	37	220	45	31
.55	97			
	197	161	99	177
	322	187	55	110
.60	43	86	131	103
	260			
	14	98	67	254

q	NUMBERS			
0.55 to 0.60	228	53	247	15
	51	262	296	H.
	13	16	4	Br.
.60	345	166	74	
	48	12	144	192
.65	Br.	90	283	135
	279	214	347	23
	365	142	75	243
.70	Br.	305	343	373
	211			
	102	83	409	319
.75	269	308	62	153
	379	149		
	34	280	114	108
	17	6	348	72
	316	346	19	38

TABLE V—(Continued). Comets arranged in order of q.

Panel 1

q	NUMBERS			
0.70 to 0.75	253	122	194	73
.75 .80	362	121	35	355
	392	W.	84	286
	250	281	29	P-B$_8$
	148			
.85	111	133	3	124
	313	277	94	244
	276	325	178	411
	271	21	24	W.
.90	36	215	9	82
	272	134	89	367
	418	71	57	163
	175	202	155	B.
	B.^{A}	B.^{B}	77	85
		W.	318	168
.95	169	226	335	204
	159	381	B.	238
	104	10	284	285
	234	270	18	
	181			
1.00	20	39	354	68
	326			

Panel 2

q	NUMBERS			
0.95 to 1.00	224	112	11	275
1.00 1.05	95	126	145	407
	290	400	27	274
	413	321	231	B.
1.05 1.10	Fi.	338	337	79
	25	376	255	301
	96	327	2	Tu.
	78	59	402	146
	387	167		
1.10 1.15	T$_3$-S.	120	278	329
	138	364	227	141
	306	237	137	50
	386	287	106	115
	164	64	412	259
	225	d'A.	184	201
1.15 1.20	408	266	154	O.
	O.	150	193	249
1.20 1.25	299	171		
1.25 1.30	236	205	395	358
	d'A.	125	417	

Panel 3

q	NUMBERS			
1.30 to 1.35	267	282	d'A.	368
1.35 1.40	T$_2$			
	T$_2$	389	245	212
	415	331	377	
1.40 1.45	40	406	263	107
1.45 1.50	113	372	195	208
	219			
1.50 1.55	128	213	383	292
1.55 1.60	T$_1$	Wo.	330	
	130	147		
1.60 1.65	199	375		
1.65 1.70	F.	320		
1.70 1.75	F.			
1.75 1.80	218	T$_1$		
1.80 1.85	384	340	302	396
1.90 2.00	391	351	388	403
2.00 2.10	173	188	241	393
2.10 2.20	217	404	246	88
2.20 2.50	385	361		
4.05	80			

TABLE VI. COMETS ARRANGED IN ORDER OF a.

a	Numbers			a	Numbers		Numbers		
2.2 to 3.0	E. 159 100			100 to 150	213 Tu.		375 244 142		
3.0 3.1	T$_2$ 64 358			150 200	290 292		262 101 379		254
3.1 3.2	85 201 Br.	T$_3$-S.		200 250	236 P-B$_8$ O. H.		179 308 208		
	368 102	T$_1$			148 211		346 146 313		193
3.2 3.3	W. 415 113	T$_1$		250 300	275 386		284		
3.3 3.4	W.			300 350	253 206		171 387 305		
3.4 3.5	406 396			350 400	320		164 231 263		
3.5 3.6	d'A. 259 B.^{A}	B.^{B}		400 500	195 271	270	377 97 216		
	B. d'A. Wo.			500 1000	214 246	198	226 65 355		255
3.6 3.7	Fi. 417 388				351		319 402		327
3.8 3.9	404 412			1000 1500	353 238		227		321
4.0 4.5	F. 389 348				147 245		354 218 409		

TABLE VII. COMETS ARRANGED IN ORDER OF U.

U	Numbers			U	Numbers		U	Numbers	
3.3 years	E.			6.2 to 6.4	406 d'A.		13 to 14	213 Tu.	
4.8	159			6.4 6.6	396 d'A.		30 40	290	
5.0 to 5.2	100			6.6 6.8	B. 259 B.^{B} B.^{A}		40 50	292	
5.2 5.4	T$_2$ 64 358				Fi. d'A. Wo. 85		60 70	236	
5.4 5.6	201 Br. T$_3$-S. W.			6.8 7.0	Wo. 404		70 80	P-B$_8$ 148 O. H. 211	
	368			7.0 7.5	417 388 F. 412		80 90	220	
5.6 5.8	W. 102 T$_1$ T$_1$			7.5 8.0	F.		100 200	275 386	
5.8 6.0	W. 415 113			8.5 9.0	389 348		200 250	253 206	

TABLE VII—(*Continued*). Comets arranged in order of *U*.

U	NUMBERS.			
300 to 500	320	195.	271	270
500 700	214	246	198	351
700 1000	353	238	147	245
1000 1500	375	244		
1500 2000	142	262		
2000 2500	101	379	254	

U	NUMBERS.			
2500 to 3000	179	308	208	346
3000 3500	146	313		
3500 4000	193	284		
4000 5000	171			
5000 6000	387	305	164	231
6000 7000	263	255	377	

U	NUMBERS.			
7000 to 8000	97			
8000 9000	226	65		
10000 20000	216	327	319	
20000 30000	402	355	321	227
40000 45000	354	218	409	

TABLE VIII. COMETS ARRANGED IN ORDER OF *e*.

e	NUMBERS.			
.400 to .500	404	T_1	388	396
.500 .550	T_1	F.	F.	Wo.
.550 .600	T_2	113	368	358
.600	415	406	417	d'A.
.650	201	64	259	389
	T_3-S.	d'A.		
.700	159	412		
	Fi.	85	B.	W.
.750	213			
	B.	W.	B.ᴬ	B.ᴮ
.800	102	Br.		
	Br.	Tu.	348	E.

e	NUMBERS.			
.850 to .900	100	292	O.	
.900 .950	290	236	386	246
.950 .960	P-B₈	148	320	
.960 .970	275	211		
	H.			
.970 .980	195	351	220	375
.980 .990	253	147	270	
	271	245	238	244
.990	214	206	208	
	193	146	171	142
.995	379	377	263	262
.996	164	284		

e	NUMBERS.			
.996 to .997	308	346	313	387
.997 .998	231	254	255	
.998 .999	327	305	226	
.999 1.000	218	402	97	
	321	227	355	
1.000 1.001	101	179	409	
	192	353	198	352
	65	221	366	203
1.001 1.010	376			
	225	240		
1.010 1.012	141	155		